INNOVATIONS IN RURAL AND AGRICULTURE FINANCE

# Credit Risk Management in Financing Agriculture

*MARK D. WENNER*

2020 VISION FOR FOOD, AGRICULTURE, AND THE ENVIRONMENT

FOCUS 18 • BRIEF 10 • JULY 2010

Agriculture is an inherently risky economic activity. A large array of uncontrollable elements can affect output production and prices, resulting in highly variable economic returns to farm households. In developing countries, farmers also lack access to both modern instruments of risk management—such as agricultural insurance, futures contracts, or guarantee funds—and ex post emergency government assistance. Such farmers rely on different "traditional" coping strategies and risk-mitigation techniques, but most of these are inefficient. Formal and semiformal arrangements—such as contract farming, joint-liability lending, and value-chain integration—have arisen in recent decades, but they too are limited and can be very context sensitive. One consequence of inadequate overall financial risk management is that farmers in general face constrained access to formal finance. The smaller the net worth of the farm household, the worse the degree of exclusion.

Formal lenders avoid financing agriculture for a host of reasons: high cost of service delivery, information asymmetries, lack of branch networks, perceptions of low profitability in agriculture, lack of collateral, high levels of rural poverty, or low levels of farmer education and financial literacy. But, predominantly, bank managers around the world say they will not finance agriculture because of the high degree of uncontrolled production and price risk that confronts the sector. A farmer can be an able and diligent manager with an excellent reputation for repayment, guaranteed access to a market, and high-quality technical assistance, but an unexpected drought or flood can force him or her to involuntarily default. In emerging countries with fair to high levels of agricultural market and trade integration, large commercial farmers may escape this predicament because they have the ability to purchase insurance, engage in price hedging, obtain financing overseas, or liquidate assets quickly in the event of a default. Consequently, formal lenders tend to overemphasize the use of immoveable collateral as the primary buffer against default risk, which means they provide services to a limited segment of the farm population. Small- and medium-sized farmers, who constitute the vast majority of farm operators, often do not have secured-title land, which is the preferred type of collateral; if they do, its value may be insufficient to cover the loan in question. Even if farmers have sufficient titled land to collateralize loans, they may refuse low-interest formal loans and assume high-interest informal ones that have no collateral requirements instead. They may also use savings to finance agricultural production because they are averse to risking their most prized possession—land. The result is limited supply or access to formal agricultural financing, even though much of the population of Sub-Saharan Africa and South Asia is rural and depends on agriculture and livestock rearing for their main livelihood activities.

## Typical risk-management mechanisms in rural financial intermediaries

In developing countries, formal and semiformal rural financial intermediaries have limited or nonexistent means to transfer credit risk to third parties through, for example, portfolio securitization or credit insurance, which were common in mortgage and consumer finance markets in developing countries prior to the 2008 financial crash. If more farm borrowers held agricultural insurance policies, this could serve to reduce credit risk for financial institutions, but agricultural insurance markets are grossly underdeveloped in middle- and low-income countries. For example, agricultural premiums totaled US$18.5 billion worldwide in 2008, but the United States and Canada accounted for 62 percent of the premium volume. Latin American, Asian, and African regions, home to most of the lower-income countries, accounted for 21 percent, or US$3.88 billion. Moreover, the leading countries in terms of agricultural insurance development—the United States, Canada, and Spain—all depend on heavily subsidized schemes that would be difficult to replicate in other places.

Thus, most of the strategies available to financial intermediaries in developing countries involve coping with and absorbing credit default risk. There are two broad means of evaluating creditworthiness: appraisal of repayment capacity and asset-backed lending. The former approach focuses on analyzing the debt-paying capacity of a potential borrower using either human experts or statistical models, while the latter focuses on the quality and quantity of assets that can be pledged as collateral and how quickly that collateral can be liquidated in the event of a default. Since titled assets are scarce outside of large farms and extensive databases on farm enterprises rarely exist in developing countries, the following represent the four credit risk-management techniques used successfully by rural financial intermediaries.

**Expert-based credit evaluation systems:** Trained credit officials conduct financial analysis of the client, focusing on household cash flow, market situation, assessment of managerial or entrepreneurial ability, and reputation. Institutions can have centralized or decentralized systems to approve client requests as long as both systems include performance incentives for and investments in staff members, who should be recruited from the region of operations. To quickly determine client willingness to repay loans, staff members need access to credit bureaus or borrowers' utility bill payments. Agriculture requires a wide range of experts since it is such a heterogeneous field; therefore, an expert-based evaluation system is expensive to both develop and maintain.

**Portfolio diversification:** In order to dilute risk, intermediaries consciously seek to diversify the agricultural loans approved by geographic region, commodity, and type of household. This technique can be implemented only by large institutions that operate in more than one agroclimatic zone, however.

**Portfolio exposure limit:** Because agricultural lending is risky and expensive, high-performing financial intermediaries tend to limit exposure to agriculture in their loan portfolio. For example, recent survey data in Latin America found that the average share is less than 40 percent. The smaller the share agriculture has in a total loan portfolio, the less vulnerable the institution is to systemic external

shocks that could severely depress earnings performance and the more cross-subsidization can occur. High-margin financial products—such as consumer finance and urban microfinance—can compensate for lower profit margin products, such as agricultural loans.

**Excessive provisioning:** The last line of defense is called "loan loss provisioning," meaning an internal absorption of credit risk. Adequate provisioning according to a risk-classification scheme helps to protect the intermediary from liquidity and capital adequacy crises. Some leading agricultural lenders in Latin America, for example, provision from 121 to 260 percent of doubtful loans. Heavy provisioning, however, clearly constrains the volume of lending, ability to make a profit, and client outreach potential.

## Implications for managers of financial institutions and public policymakers

There are numerous implications of these credit risk-management techniques. First, the credit risk evaluation systems are labor intensive with high costs, which, in turn, contribute to high lending interest rates. Public-sector policymakers need to understand this, so they avoid imposing interest rate ceilings or forcing publicly owned banks to charge interest rates that are lower than their true operating costs because results would then be counterproductive. Additionally, fewer intermediaries would be willing or able to serve the sector. Therefore, both policymakers and managers should focus on developing and implementing institutional innovations—such as credit bureaus, applications of information and communication technology, and delegated agent models of service delivery—that will reduce overall operating costs.

Second, agricultural lending cannot be the primary type of lending unless robust risk-transfer techniques (for example, insurance, futures, and securitization) become more commonplace. In place of land, alternative forms of collateral—including warehouse receipts, accounts receivable, equipment, and standing crops or livestock—should be more widely accepted. Improved contract enforcement should be aggressively promoted as well. These developments would all serve to lower lender risk. Many of these innovations and institutional developments require legal and regulatory reforms, modernization of property registries, investments in information infrastructure, and massive education efforts.

Third, the majority of institutions involved in agricultural lending are small and unregulated. They are using adapted microcredit-lending technologies that do not fully meet the needs of farmers, especially those needs regarding loan term and repayment frequencies. These shortcomings pose default risks in and of themselves. The larger institutions that have the scale and scope tend not to enter into agricultural lending because they do not have the strategic commitment, proper staff, or branch networks. Donors and governments can play a vital role in assisting these smaller institutions to grow, consolidate, and eventually merge. They can also help rural financial intermediaries with liability diversification through mobilization of savings, access to capital markets, and the provision of long-term lines of credit that could facilitate more term lending. Nevertheless, donors and governments must price the discount line of credits in a manner that will not undermine savings mobilization.

## Conclusion

In short, risk management needs to improve dramatically so that agricultural finance can flourish. Strides have been made in recent years in reducing information problems and transaction costs through, respectively, peer-group lending and a greater reliance on information and communication technology. Uncontrollable risk, however, continues to be a major impediment to the development of more efficient rural financial markets. Renewed private–public sector efforts and higher amounts of investments will be required at various levels to address these issues. At the farmer level, governments need to spur the rebuilding of farm extension services, while farmers need to become more financially literate and save more so they can retain some of the risks. Governments, donors, and insurance companies need to collaborate in the development of yield-insurance products that are inexpensive, sustainable, and appropriately designed. Governments, commodity exchanges, and financial institutions likewise need to collaborate in developing futures, structured finance products, and other hedging instruments to reduce price risk.

At present, the lack of high-quality weather data, inadequate distribution of weather stations, limited supply of people with risk-modeling capabilities and expertise in agricultural risk management, small capital markets, and weaknesses in regulatory and legal infrastructure hamper the pace of progress. Since the depth and efficiency of financial markets are highly correlated with the speed of overall economic development, innovative methods of improving rural financial services will be critical in facilitating and sustaining any marked improvement in rural welfare. ■

**For further reading: H. Bhattacharya, *Banking Strategy, Credit Appraisal and Lending Decisions: A Risk-Return Framework*, (New Delhi, India: Oxford University Press, 1996); J. B. Caoutte, E. I. Altman, and P. Narayanan. *Managing Credit Risk: The Next Great Financial Challenge*, (New York: John Wiley and Sons, Inc., 1998); C. Trivelli, and A. Tarazona, *Riesgo y Portafolios Agropecuarios: Lecciones desde la Experiencia de Instituciones Financieras de América Latina,* Documento de Trabajo 151 (Lima, Perú: Instituto de Estudios Peruanos, 2007), www.iep.org.pe/textos/DDT/DDT151.pdf; M. Wenner, S. Navajas, C. Trivelli, and A. Tarazona, *Managing Credit Risk in Rural Financial Institutions in Latin America*, Sustainable Development Department Best Practices Series MSM 139 (Washington, D.C.: Inter-American Development Bank, 2007); World Bank, *Doing Business* database, www.doingbusiness.org/economyrankings.**

***Mark D. Wenner** (markw@iadb.org) is a lead financial specialist in the Capital Markets and Financial Institutions Division of the Inter-American Development Bank.*

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
Supported by the CGIAR
IFPRI® **www.ifpri.org**

THE WORLD BANK
**www.worldbank.org**